Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1-76. (Cancelled)

77. (Currently Amended) A method of maskless lithographic pattern generation using an array of exposure cells, wherein ~~at least one~~ a plurality of the exposure cells ~~exposes~~ expose separate areas of a surface to be exposed, ~~wherein the exposure cells have a thickness of less than about 50 microns,~~ and wherein the plurality of the exposure cells are capable of independent simultaneous operation;

providing at least one dielectric layer; and

providing a plurality of interconnect conductors formed at least one of through and within the at least one dielectric layer.

78. (Previously Presented) The method of claim 77, wherein a substantial portion of the separate areas are exposed simultaneously.

79. (Previously Presented) The method of claim 77, further comprising moving through a sequence of horizontal and vertical motions at least one of the array of exposure cells and the surface to be exposed.

80. (Previously Presented) The method of claim 77, further comprising aligning by electro-magnetic coupling the array of exposure cells and the surface to be exposed.

81. (Previously Presented) The method of claim 77, wherein each exposure cell is selected from the group consisting of a radiation source cell or a shuttered cell.

82. (Previously Presented) The method of claim 77, wherein the shutter of a shuttered cell is used to vary operation of the exposure cell.

83. (Previously Presented) The method of claim 77, wherein radiation from a radiation source cell is selected from the group consisting of electrons, protons, X-ray, UV or optical.

84. (Currently Amended) A method of maskless lithographic pattern generation, the method comprising:

providing an array of exposure cells formed on a substrate, wherein ~~at least one~~ a plurality of the exposure cells ~~exposes~~ expose separate areas of a surface to be exposed~~, wherein a major portion of the substrate has a thickness of less than about 50 microns, and wherein the exposure cells are capable of independent simultaneous operation~~; and

providing a low stress and elastic dielectric layer on the substrate.

85. (Previously Presented) The method of claim 84, wherein a substantial portion of the separate areas are exposed simultaneously.

86. (Previously Presented) The method of claim 84, further comprising moving through a sequence of horizontal and vertical motions at least one of the array of exposure cells and the surface to be exposed.

87. (Previously Presented) The method of claim 84, further comprising aligning by electro-magnetic coupling the array of exposure cells and the surface to be exposed.

88. (Previously Presented) The method of claim 84, wherein each exposure cell is selected from the group consisting of a radiation source cell and a shuttered cell.

89. (Previously Presented) The method of claim 84, wherein the shutter of a shuttered cell is used to vary operation of the exposure cell.

90. (Previously Presented) The method of claim 84, wherein radiation from a radiation source cell is selected from the group consisting of electrons, protons, X-ray, UV or optical.

91. (Previously Presented) The method of claim 84, wherein at least one of the following conditions is true: (1) the stress of the low stress and elastic dielectric layer is less than about 8 x 10^8 dynes/cm^2; (2) the low stress and elastic dielectric is capable of forming at least one of a flexible membrane, an elastic membrane, and a free standing membrane; and (3) the low stress and elastic dielectric layer is selected from the group consisting of an oxide of silicon, a nitride of silicon, silicon dioxide and silicon nitride.

92. (Previously Presented) The method of claim 77, wherein the array of exposure cells includes at least one million cells.

93. (Currently Amended) The method of claim 77, ~~further comprising providing~~ wherein the at least one dielectric layer is a stress-controlled dielectric layer.

94. (Previously Presented) The method of claim 93, wherein the stress of the at least one stress-controlled dielectric layer is less than about 8 x 10^8 dynes/cm^2.

95. (Previously Presented) The method of claim 94, wherein the stress is tensile.

96. (Previously Presented) The method of claim 93, wherein the stress of the at least one stress-controlled dielectric layer is 2 to 100 times less than the fracture strength of the at least one stress-controlled dielectric layer.

97. (Previously Presented) The method of claim 96, wherein the stress is tensile.

98. (Previously Presented) The method of claim 93, wherein the at least one stress-controlled dielectric layer is selected from the group consisting of an oxide of silicon, a nitride of silicon, silicon dioxide and silicon nitride.

99. (Previously Presented) The method of claim 93, wherein the at least one stress-controlled dielectric layer is elastic.

100. (Previously Presented) The method of claim 93, wherein the at least one stress-controlled dielectric layer is substantially flexible.

101. (Previously Presented) The method of claim 93, wherein the at least one stress-controlled dielectric layer is capable of forming at least one of a flexible membrane and a free standing membrane.

102. (Previously Presented) A method of maskless lithographic pattern generation using an array of exposure cells wherein the exposure cells expose separate areas of a surface to be exposed, further comprising:

providing at least one stress-controlled dielectric layer; and

providing a plurality of interconnect conductors formed within the at least one stress-controlled dielectric layer.

103. (Previously Presented) The method of claim 93, wherein the at least one stress-controlled dielectric layer is formed by multiple RF energy sources.

104. (Previously Presented) The method of claim 93, wherein the at least one stress-controlled dielectric layer is formed at a temperature of about 400°C.

105. (Previously Presented) The method of claim 77, further comprising providing at least one thinned flexible substrate that has integrated circuitry with active devices formed thereon.

106. (Previously Presented) The method of claim 84, wherein the array of exposure cells includes at least one million cells.

107. (Previously Presented) The method of claim 84, further comprising providing at least one stress-controlled dielectric layer.

108. (Previously Presented) The method of claim 91, wherein the stress is tensile.

109. (Previously Presented) The method of claim 84, wherein the stress of the at least one stress-controlled dielectric layer is 2 to 100 times less than the fracture strength of the at least one stress-controlled dielectric layer.

110. (Previously Presented) The method of claim 109, wherein the stress is tensile.

111. (Previously Presented) The method of claim 107, wherein the at least one stress-controlled dielectric layer is selected from the group consisting of an oxide of silicon, a nitride of silicon, silicon dioxide and silicon nitride.

112. (Previously Presented) The method of claim 107, wherein the at least one stress-controlled dielectric layer is elastic.

113. (Previously Presented) The method of claim 107, wherein the at least one stress-controlled dielectric layer is substantially flexible.

114. (Previously Presented) The method of claim 107, wherein the at least one stress-controlled dielectric layer is capable of forming at least one of a flexible membrane and a free standing membrane.

115. (Previously Presented) A method of maskless lithographic pattern generation, the method comprising:

providing an array of exposure cells on a substrate, wherein the exposure cells expose separate areas of a surface to be exposed;

providing a stress-controlled dielectric layer on the substrate;

providing at least one stress-controlled dielectric layer; and

providing a plurality of interconnect conductors formed within the at least one stress-controlled dielectric layer.

116. (Previously Presented) The method of claim 107, wherein the at least one stress-controlled dielectric layer is formed by multiple RF energy sources.

117. (Previously Presented) The method of claim 107, wherein the at least one stress-controlled dielectric layer is formed at a temperature of about 400°C.

118. (Currently Amended) The method of claim 84, [[,]] wherein the substrate has integrated circuitry with active devices formed thereon.

119. (Previously Presented) The method of claim 84, wherein the low stress and elastic dielectric layer is capable of forming at least one of a flexible membrane, an elastic membrane, and a free standing membrane.

120. (Previously Presented) The method of claim 84, wherein the low stress and elastic dielectric layer is selected from the group consisting of an oxide of silicon, a nitride of silicon, silicon dioxide, and silicon nitride.